FIG. 1

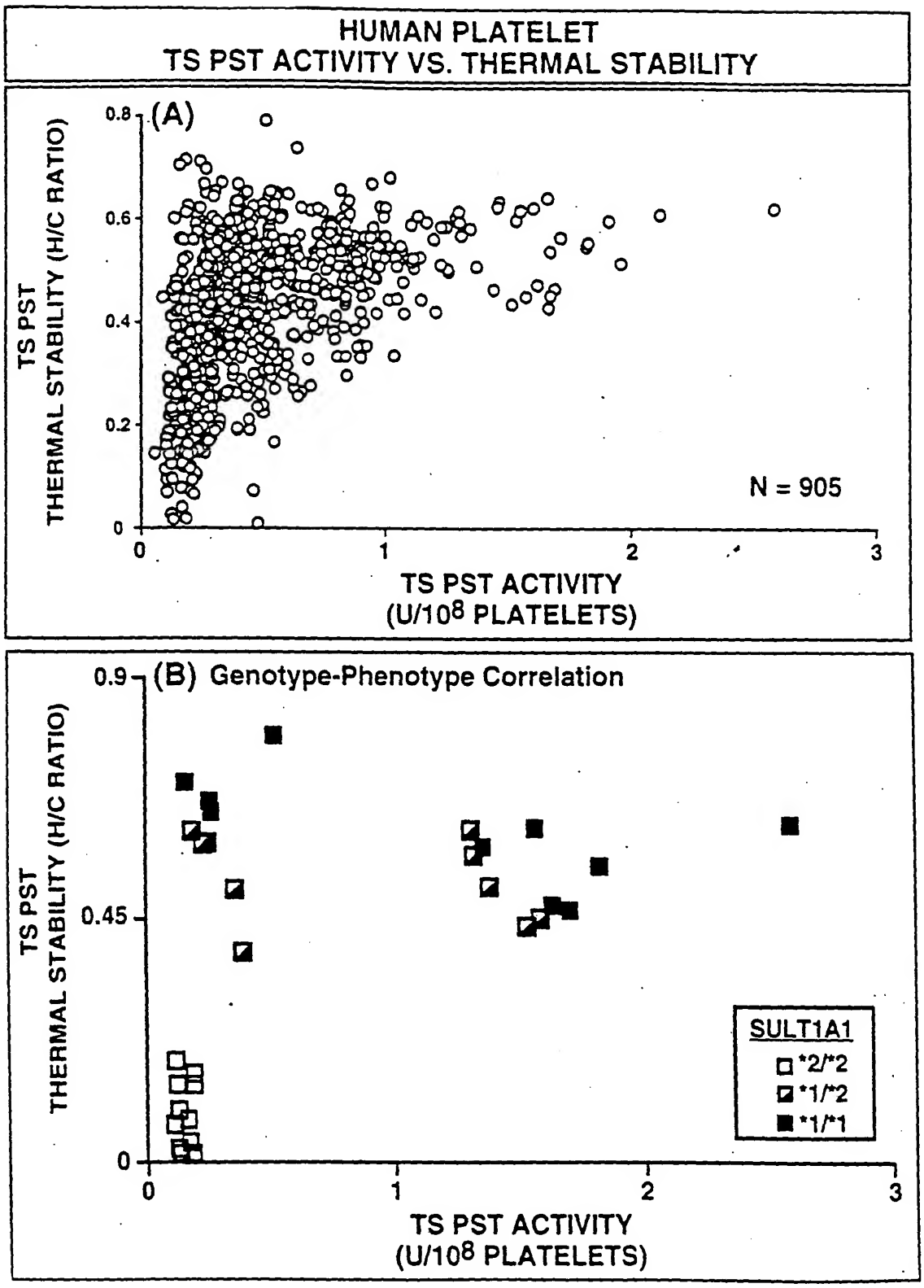
HUMAN PLATELET
TS PST ACTIVITY VS. THERMAL STABILITY
(A)
TS PST
THERMAL STABILITY (H/C RATIO)
0.8
0.6
0.4
0.2
0
N = 905
0
1
2
3
TS PST ACTIVITY
(U/10^8 PLATELETS)
(B) Genotype-Phenotype Correlation
TS PST
THERMAL STABILITY (H/C RATIO)
0.9
0.45
0
SULT1A1
*2/*2
*1/*2
*1/*1
0
1
2
3
TS PST ACTIVITY
(U/10^8 PLATELETS)

FIG. 2

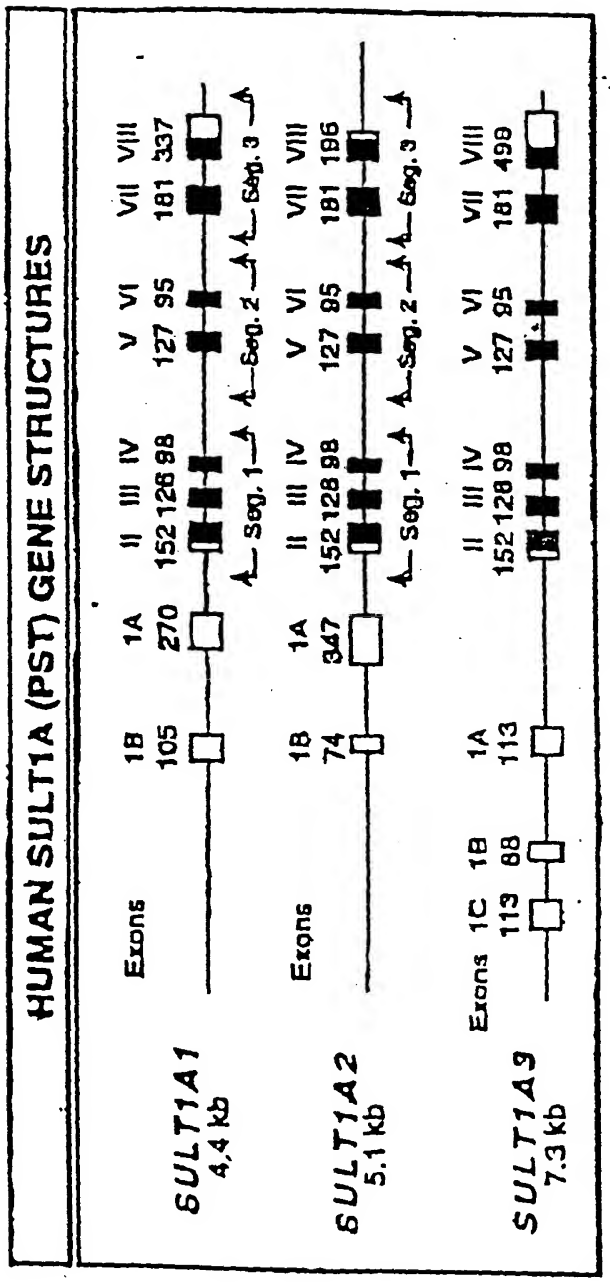
HUMAN SULT1A (PST) GENE STRUCTURES
SULT1A1
4.4 kb
Exons
1B 1A II III IV V VI VII VIII
105 270 152 128 98 127 95 181 337
Seq. 1
Seq. 2
Seq. 3
SULT1A2
5.1 kb
Exons
1B 1A II III IV V VI VII VIII
74 347 152 128 98 127 95 181 186
Seq. 1
Seq. 2
Seq. 3
SULT1A3
7.3 kb
Exons 1C 1B 1A II III IV V VI VII VIII
113 88 113 152 128 98 127 95 181 498

FIG. 3

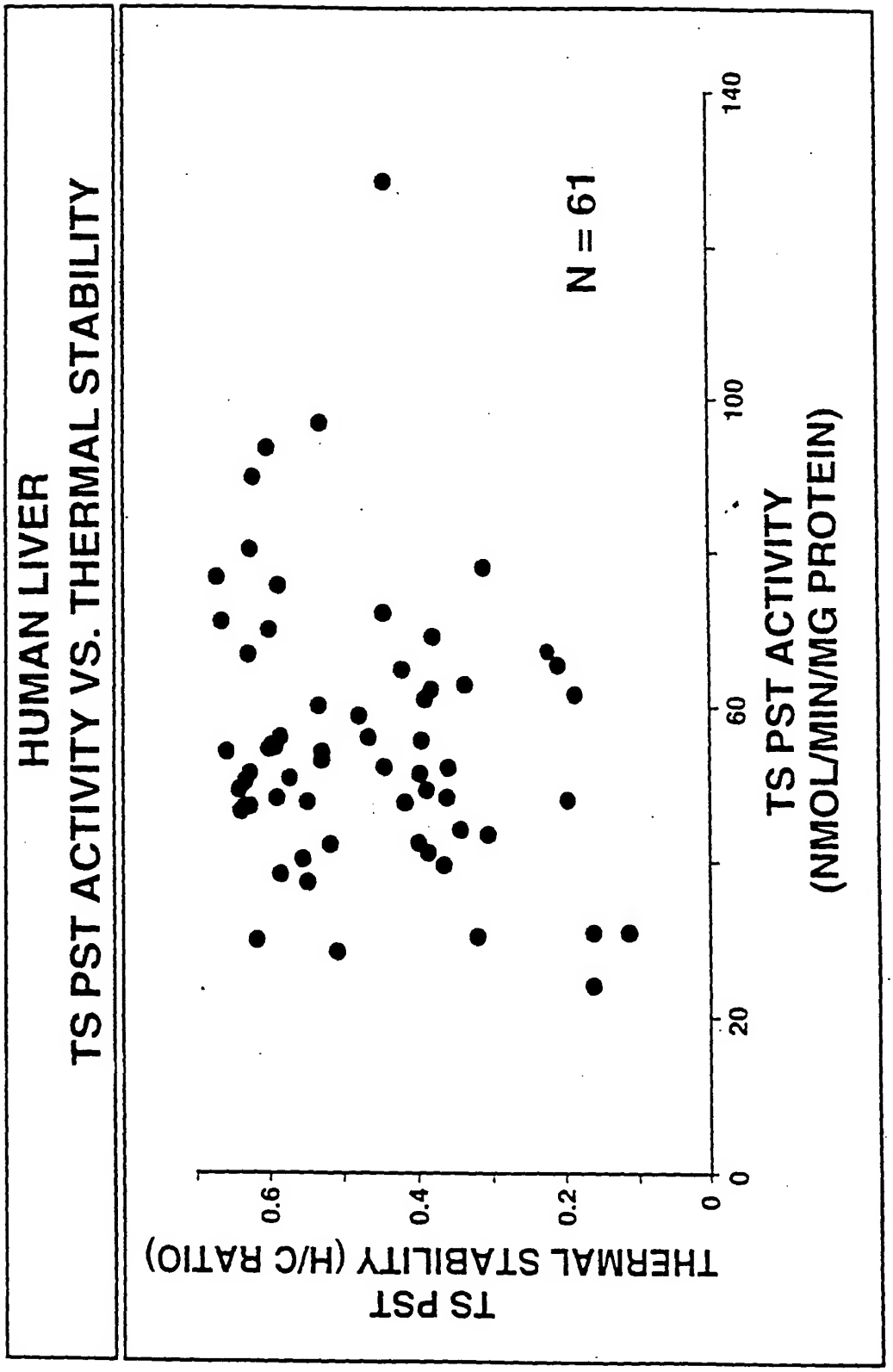
HUMAN LIVER
TS PST ACTIVITY VS. THERMAL STABILITY
N = 61
TS PST
THERMAL STABILITY (H/C RATIO)
0
0.2
0.4
0.6
0
20
60
100
140
TS PST ACTIVITY
(NMOL/MIN/MG PROTEIN)

FIG. 4

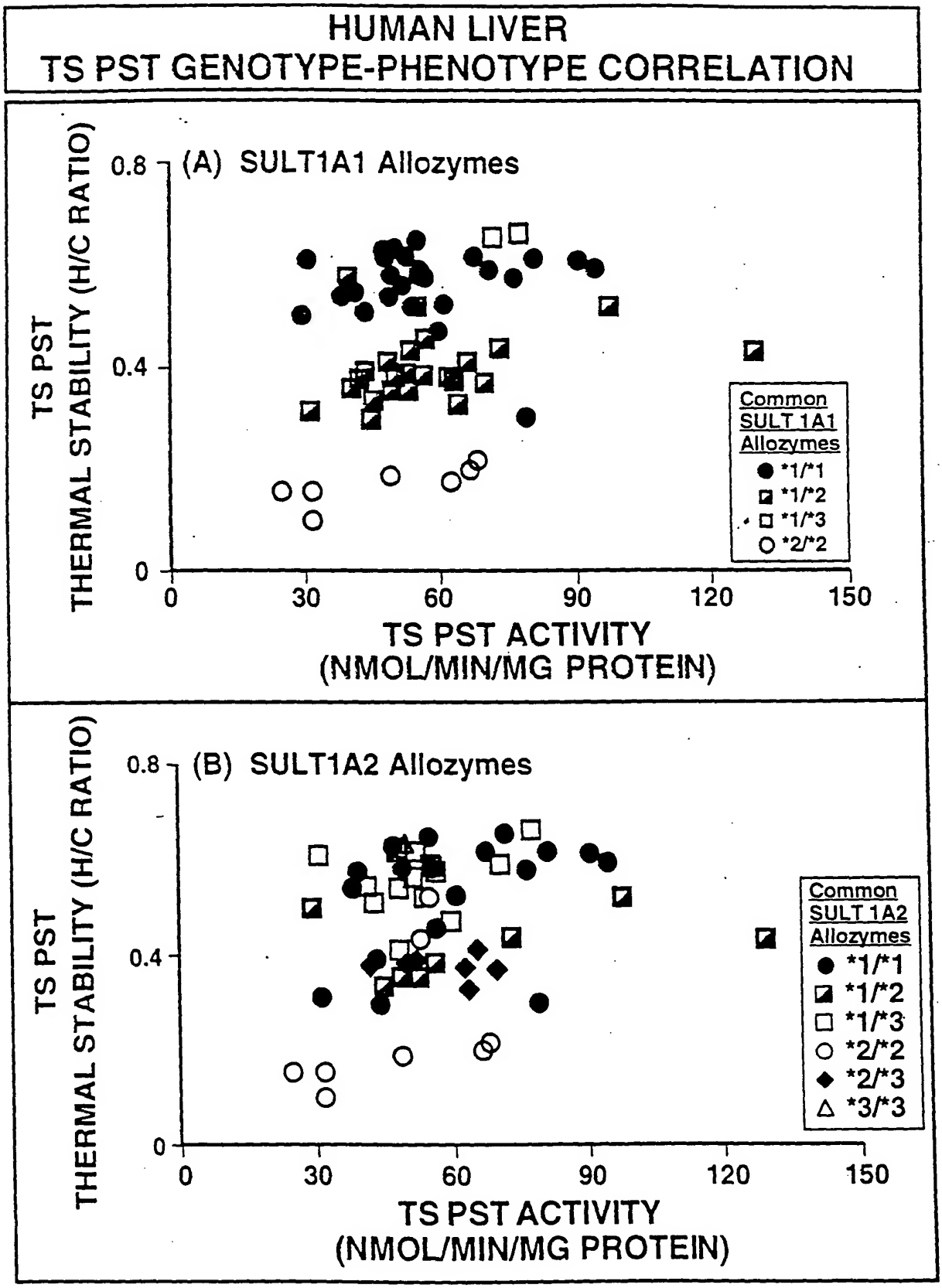
HUMAN LIVER
TS PST GENOTYPE-PHENOTYPE CORRELATION
(A) SULT1A1 Allozymes
TS PST
THERMAL STABILITY (H/C RATIO)
0.8
0.4
0
0
30
60
90
120
150
TS PST ACTIVITY
(NMOL/MIN/MG PROTEIN)
Common
SULT 1A1
Allozymes
*1/*1
*1/*2
*1/*3
*2/*2
(B) SULT1A2 Allozymes
TS PST
THERMAL STABILITY (H/C RATIO)
0.8
0.4
0
0
30
60
90
120
150
TS PST ACTIVITY
(NMOL/MIN/MG PROTEIN)
Common
SULT 1A2
Allozymes
*1/*1
*1/*2
*1/*3
*2/*2
*2/*3
*3/*3

FIG. 5

HUMAN *SULT1A1* GENE SEQUENCE

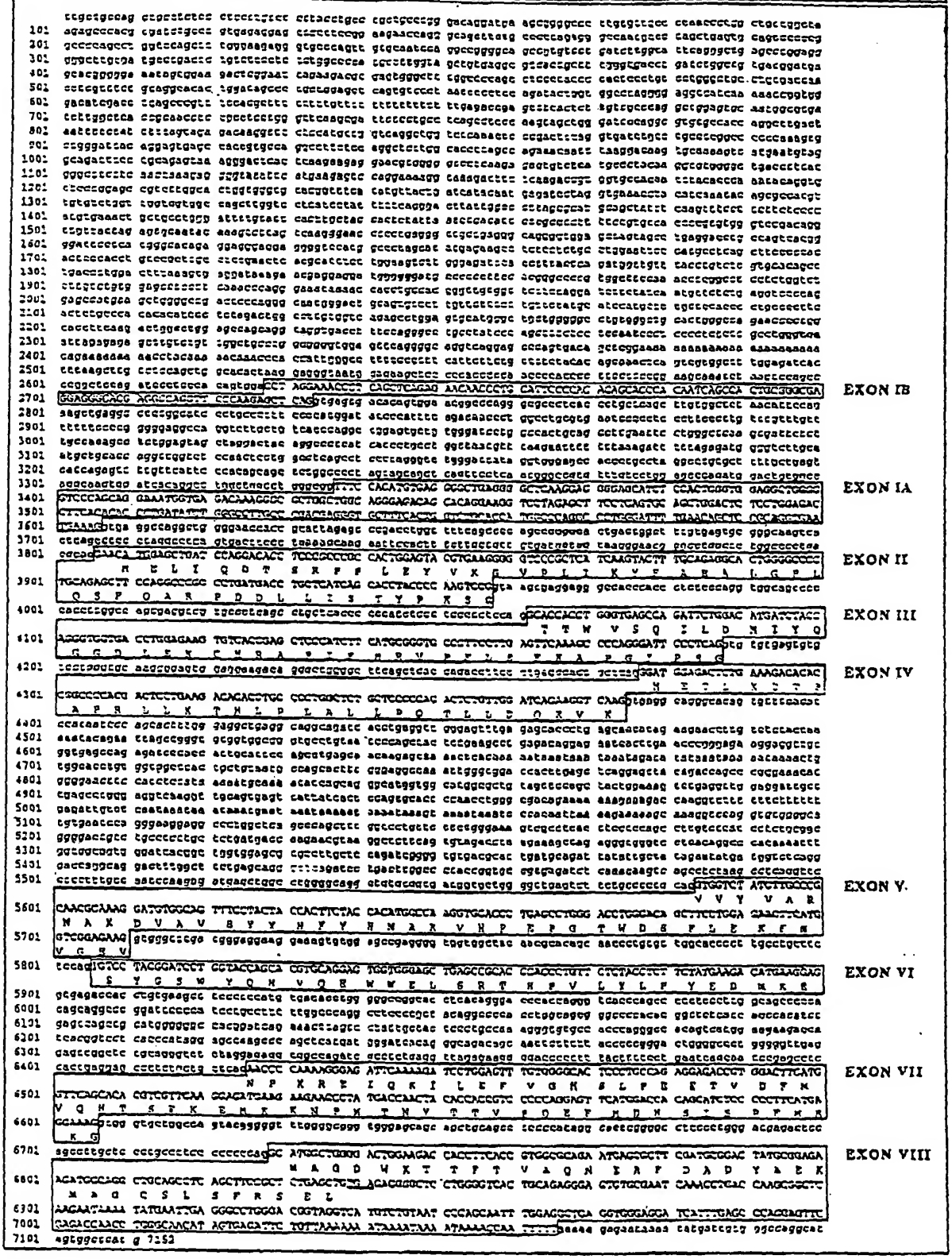

Figure 1. *SULT1A1* gene sequence. Exon sequence is shown in uppercase, while intron, 5'-flanking region and 3'-flanking region sequence is in lowercase. The "ATG" translation initiation codon and the "TGA" translation termination codon are underlined. Amino acid sequence encoded by the gene is listed in single-letter code beneath the nucleotide sequence.

FIG. 6

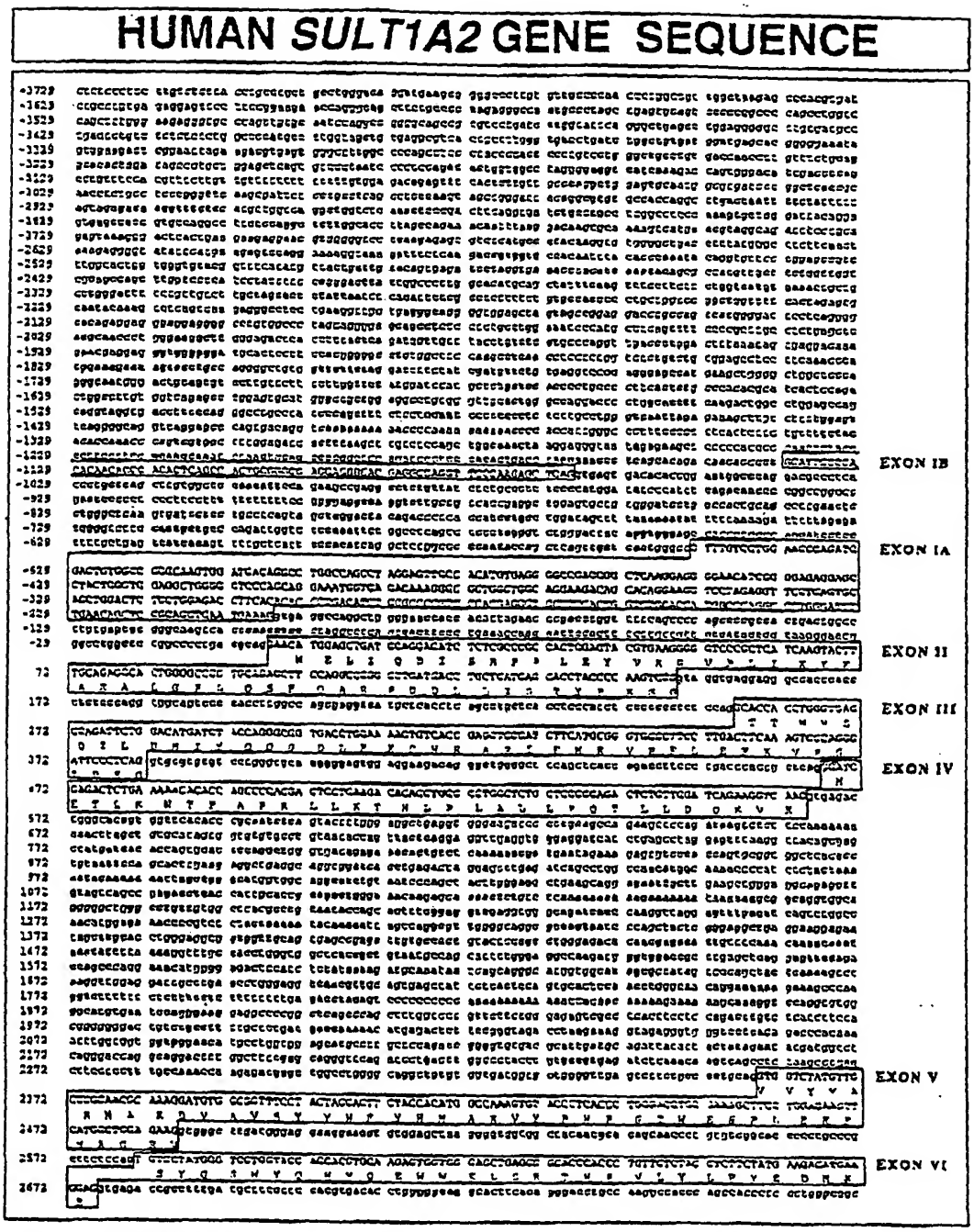

Figure 2. *SULT1A2* gene sequence. Exon sequence is shown in uppercase, while intron, 5'-flanking region and 3'-flanking region sequence is in lowercase. Amino acid sequence encoded by the gene is listed in single-letter code beneath the nucleotide sequence.

FIG. 7

```
   1 acctctgcct cctggttcca agcaatcctc cttcctcacc ctccagagta gctgggatta
  61 cacgcgcctg ccaccgcgcc tggcctaatt tttgtatttt tagtagagat gggggtttcc
 121 aaccatgttg gccaggctgg tctccaaact cctgacctca ggtgatcctg cccacctaag
 181 cctcccaaaa tgctggtatt acaggcatga gccaccgtgc ccggcctaaa taattaataa
 241 aataatggac gatgggtgcc ttctactgag ctcccggtaa ttgtgagtga gtagaggact
 301 tgccctgggg acattcagtg acctgctggg tgttgctgag ctgtgaggaa gttcaggtct
 361 ggctgcagtg gtgaggctgt gactcaatca atcactgctg atgctcccag gacctgcacc
 421 agcttagtcc taggggcaag gattttaact gtccacctca gtttcttcat ttgtaagatg
 481 caaataacag tcacccctgc ctcatgggat ggagctgtgt aatgcccgca acagtgcctg
 541 ctgcatagag gggttgctgc cagctgcctc tccctccttg tctcttacct gcctgctgcc
 601 tgggtcagga tgaagacccg ccctttgtgtt gccccaccc tggctgcctg ctaagggccc
 661 atgtgatctg cctggcagag gagtttcttc aggaagaacc agggcagctt ctgcccctag
 721 agggccaatg cccttggtga gtgcagtccc ctggccccag cctggtccac ctctgggaag
 781 agggtgccca gttgtgcaat ccaggcccag gcagctgagc cctcatctca gcatgcaggg
 841 cggatactgg agggggcttg tggcatctga ctctgtatct cctacctgcc cctctccttg
 901 gtagctgtga gaagtcactg ctttggggag acctgatctg gctgtgccag atggacactg
 961 agaaagaagt agaagactca gaattagaag aggtgagtgg gctttggtgg cgggctccct
1021 accccactcc ctgccctggg ctgcctgtga ccacactgct tgcctctgca ggcacactgg
1081 acagacctgc tggagacctg atcctcagtg tccttacccc ctcctacctc ttttctgtgc
1141 cacctgctgt gggtccagca ggtttttact tgagtacaat aaaaagtctg agtcaagggt
1201 gccttatggt ggatgctgag gggaggggcg gagctagtag cccaaggtcc tgccagtcac
1261 ggggcttcct caggggcaca gaggaggcag gaggggcccc tggccctagc acgtgaacag
1321 cttctactct gcctggaaac cccatgcctc agctttcccc tacttgcctc tgagctcatg
1381 caattcttgg aagcctggga gacttacctt gaaattgaat gcaaatagga caaagaccaa
1441 ggaggatggg gggatgccct ccttccacgg ggccctgtgg cttccaagtc ttaatctcct
1501 ctagtctctt gtctacggag cctccttcaa acccagggaa agaaaagcac ctgccagggt
1561 tgtttttctt ctaggatctt ctattgatgc tctgtgaggt cccccaggag ccatgaagct
1621 agggctggct cctagggcaa tgggactaca gtgtccttgt cctttcttat tctttctgtt
1681 ctttctttct ttctttttttt ttttttttct ttttttgag acagagtctc actctgttgc
1741 ccaggctgga gtgcagtggt gtgatcttgg ctcactgaaa cctccgcctc ctgggttcaa
1801 gtgattctct tgcctcagcc tcctgagtag ctaggattac aggtgcccgc catcatgccc
1861 agctaatttt tgtatttttа gtagagacag ggtttcacca tgttggccag cttggtctcg
1921 aactcctgac ctcaggtgat cctgctgcat cgacctccca aagtactggg attacaggcg
1981 tgagccacca cgctcagcct ctttcttgtt ctatatgtcc atgctctgct ccacttctgc
2041 cccttcactc tgccccacac atcactccag actggccttg tggtcagagc ctggaatgcc
2101 tgggctgctg ggggcctgtg gactgcactg ggccagaacc cctgccgcct tcaagactgg
2161 cctgtagcca gcaggtaggt gacttttccc aggccggcct atcccacctt tcccctccac
2221 tcactcacct cccttgcctg ggtcaattag agaaagcttg tcggccaggc atggtggctc
2281 atgcctgtaa tctcagcact ttgggaggcc gaggcgggcg gatcatctga gctcaggagt
2341 ttgagaccag cctggccaac atggcaaaac cccgtctcta ctaaaaatac aaaaattaac
2401 cggatgtggt ggtgtgcacc tgtaatccca gctactcggg aggctgaggc agaagaatcg
2461 cttgaaccca ggagggggag gttacagtga gcggagatcg tgctactgca ttgcagcctg
2521 ggcgagagag cgagtctcca tctcacataa aaaaaagaaa aagaaagaaa gcaagcttgt
2581 ctgttggcct gccctgcagg gtggagttca gagggaaggt caggagccta gtgacagctc
2641 aaaaaaaaaa aaacccaaat accaatgttg gccccttttg cctttcattc atgtgttttc
2701 tatacactaa actcacatat tgggtttgca gatcactcca agcttggctg gagctgtggt
2761 ggtaaggagg gtaatagaga agcttcccca ccctcaaccc caccccttcc ttcctggagt
2821 tcccagccct gactttagat ccctcccaca ctggaccttc aaaaccctca gggcagagag
2881 cagccctaca ctccctacac cacacccata ctcagccccc gcaggcaagg agagaacagg
2941 tcaggttccc gagagctcag gtgagtgaca cgttggaatg gcccagggca ccttcaccct
3001 gctcagcttg tggctccaac attctagaag ccgaggcctc tgccatccct gccctttccc
3061 atggatattc catttcaatt agacaaccca gcctggccgg aatcccccctg cgttccttct
3121 tttcctttgt gtatttttga gacagggtgt tgctccgtca cccaggctgg agtgtagtgg
3181 gatcctggcc cactgcagcc tcaaattcct aggctgaggc aatcctgccg cctcagcctc
```

FIG. 7 CONT.

```
3241 ctgagtagct ggggttacaa gagcaagcca ccacacccag ctaattttga aaaatatttt
3301 ttgtagagga gaggtcttgc tttgttgtcc aggttggtct caaactccag ggctcaaggg
3361 atcctttccc gttggcctcc caaggctctg ggattacagg cgggagtcac cctgcctggg
3421 cccctccttt tgatgagtca tcagttttca ttcccgcacg aggctctagc ccctggtacc
3481 agcttagttg ctcaatgggc tgtgtttgtt ctggagccca gatggactgt ggccaggcaa
3541 gtggatcaca gacctggccg gcctgggagg tttccacatg tgaggggcat gaggggggct
3601 caaggagggg agcatcgggg agaggagcgc actgggtgga ggctgggggt cccagcagga
3661 aatggtgaga caaagggcgc tggctggcag ggagacagca caggcaggcc ctagagcttc
3721 ctcagcacag ctggactctc ctggagacct tcacacaccc tgatatctgg gccccgcgct
3781 acgagggtgc tttcactggt ctgcactatg ccccaggccc tgggattttg aacagctctg
3841 caggtgactg aaaggtgcgg ccaggctggg gaacgacctg gtttcagccc cagccccgcc
3901 actgactgac tttgtgagtg cgggcaagtc actcagcctc cctaggcctc agtgacttcc
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4021 actttgggag gctgaggtag acaaatcact tgaggccagg agttctagac cagcctggcc
4081 aacatggtga aaccccatct ctactaaaga aaaaaaaaaa ttagctgagc atggttgtac
4141 atgcttgtaa tcccagctac ttgggatgcc gaggcgggag gattgcttga acccaagagg
4201 tggagtttgc agtgagctga gattgtgcca cactgcactc cagcttgggt gagagtgaga
4261 ctccatctca aaaaaaaaaa aaaaaagaga gaatcccact ttcttgctgt tgtgatggtg
4321 gtaagggaac gggcctggct ctggcccctg atgcaggaac atggagctga tccaggacac
4381 ctcccgcccg ccactggagt acgtgaaggg ggtcccgctc atcaagtact ttgcagaggc
4441 actggggccc ctgcagagct tccaagcccg acctgatgac ctgctcatca acacctaccc
4501 caagtctggt aagtgaggag ggccacccac cctctcccag gcggcagtcc ccaccttggt
4561 cagcaaggtc gtgccctcag cctgctcacc tcctatctcc ctccctctcc aggcaccacc
4621 tgggtgagcc agatactgga catgatctac cagggcggcg acctagagaa gtgtaaccgg
4681 gctcccatct acgtacgggt gcccttcctt gaggtcaatg atccagggga accctcaggt
4741 gcatggctgg gtcctggggg taagggaagt ggaggaagac agggctgggg cttcagctca
4801 ccagaccttc cctgacccac tactcagggc tggagactct gaaagacaca ccgcccccac
4861 ggctcatcaa gtcacacctg cccctggctc tgctccctca gactctgttg gatcagaagg
4921 tcaaggtgag gccgggctca atggttcaca cctgtcatcc cagtttgaga ctgaggaggg
4981 aggatccctt gaaggcgaga gatggagacc agcctgggca acattgctgt agagatgaca
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5341 ttgagacaga gtcttgctct gtcaccctgg ctggagtgca gtggcatgat ctcagctcac
5401 tgcaacctcc gcctccccag ttcaagtgat tctcctgcct cagcctcctg agtagctggg
5461 attacaggcg tgtgctacca cacccggcta atttttgtat tttttttagt agagacgggg
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5581 ctcacaaagt gctggaatta caggcgtgag ccaccgcgcc tggccctttt ttttttgag
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6001 cacttaagaa aggcagcatg tgggtgctca caggtcaggc ggaggagggg gagctggtgg
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6121 atagaatatg gtctcaggaa ccaggcagga ctttggcttc cgagcagggt tcagatccca
6181 gcttggccct acctgtgcag tgagatctca agcaagtcag cctctaagcc tcaggttcct
6241 cctttgccag ttcaacagat gagctggcct ggggtgggct gtgtggtgat ggtgctgggg
6301 ctgggtcctc tgccccctgca ggtggtctat gttgcccgaa acccaaagga cgtggcggtc
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6421 ttcctggaaa agttcatggc tggagaaggt gggcttgact ggaggaagga gggtgtgaag
6481 ccgaggggtg gtggctataa cgtacagcaa ccctgtgtcg gtgccccctg cccgcttctc
6541 tagtgtccta cgggtcctgg taccagcacg tgcaggagtg gtgggagctg agccgcaccc
6601 accctgttct ctacctcttc tatgaagaca tgaaggaggt gagaccgact gtgatgcttc
```

FIG. 7 CONT.

```
6661 cccccatgtg acacctgggg gcaggcacct cacagggacc caccaaggcc acccagcccc
6721 gtccctgggc ggctcccaca gcaagcccgg attccccatc ctacctccct ggcccaggcc
6781 cccccactgc agccccacct ggcagcaggc tcggcacagc tttcatcttc tgcacctgag
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6901 gtgtgccacc cagggccaca gtcatggaag aagaccatcc cggtcctcac ccatagcgcc
6961 caagccctgt tcatgatggg atcacagggc agagatcaat tcatttttact ccacagacta
7021 gggccccagg ggttgaggct ctttggggtt tctaggggaa gtggccagat cccctctgag
7081 gttagagagg gggacccgtt ttgttttgct ccactgagga gccctctgct gctcaggaacc
7141 ccaaaaggga gattcaaaag atcctggagt ttgtggggcg ctccctgcca gaggagacca
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7381 gcacttgggg cctcccctgg gatgagactc cagctttgct ccctgccttc ctccccagg
7441 catggctggg gactggaaga ccaccttcac cgtggcgcag aatgagcgct tcgatgcgga
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7981 agagaaactc tgagctgaaa gagtgaatgc ccggtggggc cacatatggt cacctctccc
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//
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